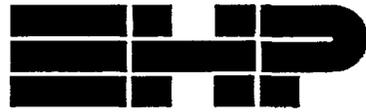


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**ENVIRONMENTAL HEALTH PROJECT**

# **ACTIVITY REPORT**

**No 23**

Evaluation of the Institutional Development  
Component of the Cairo Water II Project  
The General Organization for Greater  
Cairo Water Supply

June 1996

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# CONTENTS

ABOUT THE AUTHORS	iii
ACRONYMS	v
EXECUTIVE SUMMARY	vii
1 INTRODUCTION	1
1 1 Background	1
1 1 1 History	1
1 1 2 Project Strategy and Expected Outcomes	1
1 1 3 Cairo Water Institutional Support Contract	2
1 1 4 Evaluation Methodology	3
2 FINDINGS	4
2 1 Project Strategy and Approach	4
2 2 Financial Viability	9
2 2 1 Background	9
2 2 2 Tariff Structure	9
2 2 3 Financial Policy and Planning	11
2 2 4 Operational Cost Savings	12
2 3 Training and Manpower Development	13
2 3 1 Training Systems Development	13
2 3 2 The Management Development Program	16
2 3 3 U S -Based Training	19
2 4 Administrative Systems	20
2 4 1 Procurement, Purchasing, and Inventory Management	20
2 4 2 Management Information and Computerization	21
2 4 3 Budgeting	22
2 4 4 Personnel	22
2 5 Operations and Maintenance System Development	23
2 5 1 Background	23
2 5 2 Cost Reduction in O&M Pilot Efforts	23
2 5 3 Water Waste Reduction	24
2 6 Strategic Planning for Decentralization	25
2 6 1 Background	25
2 6 2 Strategic Planning	25

3	SUMMARY OF RECOMMENDATIONS AND CONCLUSIONS	27
3 1	Recommendations Summary	27
3 1 1	Project Strategy	27
3 1 2	Financial Viability	27
3 1 3	Training and Manpower Development	28
3 1 4	Administrative Systems	29
3 1 5	Operations and Maintenance	29
3 1 6	Strategic Planning for Decentralization	30
3 2	Conclusions	30
3 2 1	Performance to Date	30
3 2 2	Contractor Performance	31
3 2 3	Project Strategy to Transform GOGCWS	31

## APPENDIXES

A	Persons Interviewed	A-1
B	Report References	B-1
C	Legal Notes	C-1

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Mr. Zobrist previously spent five years in Egypt working on USAID-financed water and wastewater projects, including those involving the General Organization for Greater Cairo Water Supply, the Cairo General Organization for Sanitary Drainage (GOSD), and the Construction for Wastewater Organization. He also remains actively involved in Middle East water, wastewater, and water resources planning programs.

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## ACRONYMS

AID	U S Agency for International Development (Washington, D C)
BVI	Black and Veatch International
CGOSD	Cairo General Organization for Sanitary Drainage
CSC	Customer Service Center
EHP	Environmental Health Project
EMCC	empowered manager core curriculum
GOE	Government of Egypt
GOGCWS	General Organization for Greater Cairo Water Supply
GOSD	Cairo General Organization for Sanitation Drainage
HCSC	Helwan Customer Service Center
ISD	instructional systems design
LE	Egyptian pounds (US\$ 1 00 = LE 3 4)
MIS	management information system
MMS	Maintenance Management System
MOF	Ministry of Finance
MOU	Memorandum of Understanding
MTSS	Management Training and Systems Strengthening for GOGCWS, term used for the institutional development component of the Cairo Water Supply II Project and the host-country contract with BVI
MWDSC	Metropolitan Water District of Southern California
NCWCP	National Community Water Conservation Project
O&M	operations and maintenance
PACD	Project Activity Completion Date

PIP	performance improvement program
PI	performance indicator
PMO	Performance Management Office
PMU	Project Management Unit
POSCORB	A management concept emphasizing the following tasks plan, organize, staff, direct, coordinate, report, budget
PVC	polyvinyl chloride (pipes)
TOT	Training of Trainers
TNC	Training Needs Assessment
SOP	standard operating procedure
TSOM	Technical Support for O&M program
USAID	U S Agency for International Development (overseas missions)
WASH	Water and Sanitation for Health Project, predecessor project for EHP
WTP	Water treatment plant

# EXECUTIVE SUMMARY

## Background

The U S Agency for International Development (USAID) began its investment in the water and wastewater sector in Egypt in 1977. By the end of 1983, projects totaling about \$600 million had been authorized, while only \$200 million had actually been expended. The lag in expenditures was due to the planning and procurement time needed for large infrastructure projects. Projects included Alexandria Wastewater System, Cairo Water Supply, Canal Cities Water and Sewerage, Provincial Cities Development, and Cairo Sewerage I. The two Cairo projects provided \$91.4 million for an expanded water treatment plant at Rod El Farog and \$129 million for rehabilitation of the Greater Cairo sewerage system.

The Memorandum of Understanding (MOU) provided for a \$1.2 billion funding program for 1982 through 1987, on the condition that the Government of Egypt (GOE) agree to raise tariffs to cover the cost of operations, maintenance, debt service, and routine improvements and to establish local autonomous water and wastewater organizations with the authority to retain service revenues for their own operating needs.

By 1988, the Cairo Water Supply I project was phasing out, and the water treatment plant, Rod El Farog, was on-line with an expanded capacity. To fully utilize the new production, major improvements in the distribution system were needed, including upgraded and new mains and expanded storage. USAID agreed to provide \$104 million for this work, which had a strong institutional development component. The Cairo Water Supply II Project was authorized on September 25, 1988, and the Grant Agreement signed with the GOE on September 30, 1988. The purpose of this report is to document the results of a midterm evaluation of the institutional

development component. The evaluation was carried out May 19–June 6, 1996.

## Project Strategy and Expected Outcome

The Cairo Water Supply II Project provides for installation and rehabilitation of about 20 kilometers of transmission main, 33 kilometers of network lines, and new storage reservoirs. The goal of the institutional development component is to “strengthen GOGCWS institutional capacity to operate and maintain the entire Cairo water system.” Specifically, this component addresses the following areas:

- Manpower development and training
- Establishing a “twinning” exchange arrangement with a U S water utility
- Purchasing and inventory management
- Generic systems improvements
- Modernizing of accounting and financial systems
- Upgrading maintenance facilities and equipment
- Establishing a central laboratory

The component is referred to as Management, Training, and Systems Strengthening, or MTSS.

## Recommendations Summary

The following section summarizes in condensed form some of the key recommendations. Refer to Chapters 2 and 3 for more discussion and suggestions on ways to implement many of these recommendations.

### *Project Strategy*

- Performance Improvement. Continue the successful implementation of the performance improvement program.

approach, it is key to the change model. Continue to require that all project initiatives have a performance improvement plan (PIP) designed

- **Pilot Efforts** Begin pilot service centers in at least two new locations within the next six months, followed by two additional ones within a year
- **Administrative Systems** Strengthen top-level managerial support for systems re-engineering of major vertical administrative systems (budgeting and finance, personnel, procurement, incentives, and strategic planning) and develop and implement programs for their design

The major goals of decentralization, managerial autonomy, and financial viability will not be met unless there is a core administrative system that allows decentralized and delegated operations for customer service centers and water treatment plants

### *Financial Viability*

#### *Tariff*

- All parties should accept the new tariff plan, when implemented, as a major step forward. Progress meetings should be held at least annually and jointly to agree on adjustments as needed. Such reviews should include representatives of USAID, GOGCWS, GOSD, the Institutional Support Contractors, the Governor, and local council representatives
- Any future USAID expenditures for the Cairo water and wastewater sectors should include the conditions mentioned above, in addition to a plan for implementing cost accounting and cost-saving measures

#### *Operational Cost Savings*

- Programs directed at reducing operational costs are a critical factor in reaching

financial viability and should be emphasized equally with tariff rates and collection

### *Training and Manpower Development*

#### *Training Systems Development*

- Continue to strengthen and develop the training systems and complete the training PIP

#### *Management Development*

- Develop a follow-up mid-level renewal program that should provide refresher training a year after training classes and build upon the prior curriculum

### *Administrative Systems*

#### *Procurement*

- For the remaining procurement activities from the reserve account, a fast-tracking approach should be considered whereby procurement activities and performance considerations run parallel so that the final delivery steps move along rapidly

#### *Management Information Systems*

- Build on the success of the MIS PIP program, by increasing and expanding performance indicators, including the pilot programs, and broadening the circulation of reports
- Review the computer procurement plan to seek alternative means to expedite delivery
- Establish a plan for obtaining a computer service/support contract on a long-term basis using GOGCWS funds

#### *Budgeting*

- The institutional development component (or MTSS) should place emphasis on the

budget process and its development as part of the financial viability strategy, seeking to put in place a utility-based budgeting system

#### *Personnel*

- The MTSS team needs to continue to focus on developing an acceptable plan to reduce surplus manpower so that the utility can achieve financial viability

#### *Operations and Maintenance*

##### *Cost Reduction in O&M Pilot Efforts*

- MTSS and GOGCWS should develop a plan to implement the chemical reduction program throughout all water treatment plants and provide technical support and monitoring as needed
- MTSS and GOGCWS should incorporate potential electrical savings into the pilot program and develop appropriate performance indicators to monitor improvements and consider the provisional account as a source for needed corrections and improvements
- Any extension of the MTSS project should include a plan to reduce network losses by at least 50%, possibly starting on a pilot basis

##### *Water Waste Reduction*

- Work on the water wastage program should be emphasized in order to bring it back in focus as required by the contract and project paper

#### *Strategic Planning for Decentralization*

MTSS should assist GOGCWS in the following

- Develop a corporate and strategic planning function. Incorporate the Performance Management Office into this function

Charge this office with assisting in managing the annual budgeting process, with developing annual operational plans, and a long range strategic plan that is periodically updated

- Develop a plan for decentralization
- Conduct a “strategic thinking” exercise with senior staff that results in a defined, collaboratively developed, strategic vision for GOGCWS. Follow-up the exercise with staff work that will provide the outlines of strategic initiatives that can be translated into performance improvement projects
- Develop a plan for delegation of authority consistent with decentralization

#### **Conclusions**

##### *Performance to Date*

Overall performance of MTSS to date is fair on the one hand, and improving to good or very good in recent months. The greatest strides have been made during the past year as the project has now gained respect and momentum within GOGCWS. Much of this can be credited to a new and supportive Chairman. Recent successful events include the start-up of very effective pilot projects, establishment of an excellent training program, and establishment of an operational Performance Management Unit. Of course, the MTSS contractor team shares in this success. The first two years were fairly ineffective in meeting project goals and objectives, however. Much more needs to be done as the work of re-engineering GOGCWS has just begun. This window of opportunity is expected to last for at least three more years, the tenure of the current Chairman.

Though recent accomplishments have been impressive, much remains to be done. The lofty vision of the project paper and the sustainable systems and programs specified in the BVI contract will not be reachable during the remaining year of the performance period,

nor will they likely be attained within the two years remaining in the project. For most efforts, at least three more years is believed a minimum support requirement to build sustainability. Manpower systems and financial systems will take longer.

The tariff issue has been a contentious problem for all parties, with USAID rightfully claiming that the Egyptian government has again failed to meet a legal agreement, while GOGCWS and MTSS team members feel asked to deliver on a condition that is not under their control. GOGCWS and MTSS believe that the recent plan accepted by the Governor will be fully implemented within the next month or two. The plan provides for a 28% annual increase for 5 years for water and an increase to 50% for the wastewater surcharge. These have to be ratified by a local council that have the authority to make changes. This sequence of steps poses a risk and requires close USAID monitoring. If the rate increase is accepted, all sides should claim

victory and move to the next steps of continuing to improve the major water and wastewater utilities in Cairo. Without further development by each, especially regarding operations and maintenance practices, infrastructure improvements made by the \$1.2 billion USAID investment will be subject to damage and a shorter lifespan.

#### *Project Strategy to Transform GOGCWS*

The performance improvement methodology discussed in the findings is beginning to gain sufficient momentum to create sustainable change if supported and continued at least throughout the planned project activity completion date or PACD (December 31, 1997), and perhaps beyond. This methodology is supported by the commodities program and also frames all pilot activities and training initiatives. It serves to integrate the project and provide a framework for measuring results.

# 1

## INTRODUCTION

### 1.1 Background

#### 1 1.1 History

USAID investment in the water and wastewater sector in Egypt was initiated in 1977. By the end of 1983, projects totaling about \$600 million had been authorized, while only \$200 million had actually been expended. The lag in expenditures was due to the planning and procurement time needed for large infrastructure projects. Projects included Alexandria Wastewater System, Cairo Water Supply, Canal Cities Water and Sewerage, Provincial Cities Development, and Cairo Sewerage I. The two Cairo projects provided \$91.4 million for an expanded water treatment plant at Rod El Farog and \$129 million for rehabilitation of the Greater Cairo sewerage system.

Because of the major needs in the sector, the Presidents of Egypt and the United States announced in mid-1983 that they had agreed to a \$1 billion water and wastewater program with funding through 1987. This announcement was formalized into an agreement (Memorandum of Understanding or MOU), signed by the Minister of Reconstruction and Minister of State for Housing and Land Reclamation (one combined ministry at that time under Hassaballah El-Kafrawi), the Minister for Investment Affairs and International Cooperation (Wagih Shindy), and the USAID Mission Director (P. W. Stone).

The Memorandum of Understanding (MOU) provided for a \$1.2 billion funding program for the years 1982 through 1987 on the condition that the Government of Egypt

(GOE) raise tariffs "adequate to cover the cost of water and wastewater operations, maintenance, debt service, and routine improvements." The MOU also called for the establishment of "autonomous local water and wastewater organizations, with the authority to retain service revenues for their own operating needs."

The initial response by USAID was to authorize the Cairo Sewerage II project at a target level of \$816 million. The level of authorization has reached almost \$800 million, with the project activity completion date (PACD) now set for September 30, 1998.

In 1988, activities of the Cairo Water Supply I Project were phasing out and the water treatment plant, Rod El Farog, was on-line with an expanded capacity. To fully utilize the new production, extensive improvements were required in the distribution system, including upgraded and new mains and expanded storage. USAID agreed to provide \$104 million for this work, which included a major institutional development component. The Cairo Water Supply II Project was authorized on September 25, 1988, and the Grant Agreement signed with the GOE on September 30, 1988.

#### 1 1 2 Project Strategy and Expected Outcomes

Cairo Water Supply II Project provided for the installation and rehabilitation of about 20 kilometers of transmission main, 33 kilometers of network lines, and new storage reservoirs. The engineering work was awarded to an American engineering firm, CH2MHill, and construction was done by the American firm

Morris Knudsen As of June 1996, this work is nearing completion

The institutional development component of the Cairo Water Supply II Project was to provide organizational and technical systems support to the water authority, specifically addressing the following areas

- Manpower development and training
- Establishing a “twinning” exchange arrangement with a U S water utility
- Purchasing and inventory management
- Generic systems improvements
- Modernizing of accounting and financial systems
- Upgrading maintenance facilities and equipment
- Establishing a central laboratory

The goal of the institutional component of the overall project was to “strengthen GOGCWS institutional capacity to operate and maintain the entire Cairo water system ” The end-of-project status or expected outcome as envisaged by the project paper is as follows “The entire city will benefit from better management by GOGCWS A modern centralized research laboratory will monitor water quality and set the stage for future improvements in treating processes Operation and maintenance will have significantly improved through upgrading of facilities, the availability of proper equipment, tools and spare parts, skills training, and better supervisory procedures Water wastage will be significantly reduced by meter testing and repair, leak detection programs, and increased public awareness Revenues will improve with modern, functioning financial departments The training department will offer a full range of courses from in-house training for unskilled workers to the identification of management courses for their top executives Finally, GOGCWS will have established an ongoing relationship with a U S utility from which it can obtain maintenance and systems operation

advice ” This was a substantial undertaking and a lofty vision, which is still being implemented

### 1.1.3 Cairo Water Institutional Support Contract

The contract for the Management Training and Systems Strengthening Project (MTSS), was signed with Black and Veatch International (BVI) on December 21, 1992 The BVI team included both American and Egyptian subcontractors The contract specified the following major tasks

- Training and manpower development
- “Twinning” exchange
- Purchasing and inventory management
- Water waste reduction program
- Central laboratory
- Management information and computerization
- Maintenance facilities and equipment
- Management development program
- Project reports

A start-up workshop, conducted by the Water and Sanitation for Health Project ( WASH), was held May 9-11, 1993, in Cairo and included GOGCWS, USAID, and BVI The key outcome of the workshop was to bring a common understanding of the three parties of the project This was summarized by an executive panel representing the three parties as “**The purpose of the (MTSS) project (and project activities) is promoting the financial viability of GOGCWS** ” The panel defined three goals or outcomes necessary to accomplish the project purpose “**revenue enhancement, cost reduction, and organizational strengthening** ”

The start-up workshop provided a new focus to the project with emphasis on financial and managerial autonomy More-specific tasks dealing with operational improvements and efficiencies were de-emphasized in favor of the larger issues The central laboratory implementation activities were reassigned to

the facilities contractor, CH2MHill at that time

The MTSS team revised its work plan in July 1994, emphasizing a planning and systems approach and a focus on financial and managerial autonomy. The initial nine project elements were reduced to six. The project continues to evolve as of this writing, as the team has again reorganized into two subunits: one focusing on financial autonomy and the other on managerial autonomy.

#### **1.1 4 Evaluation Methodology**

The EHP evaluation team recognized the importance of GOGCWS staff and the BVI team having ample opportunities for participation in the evaluation as well as receiving feedback on findings and recommendations. Throughout the evaluation (May 19 - June 6, 1996), the EHP team spent a

great deal of time with the principals of the two organizations to ensure that their concerns and ideas were included. In addition to interviews, meetings, and discussions, the team reviewed a number of documents and made several site visits. Persons interviewed are listed in Appendix A. Appendix B lists the documents reviewed as part of the evaluation. Updates and discussions were routinely held with concerned USAID parties.

The evaluation team found the assignment challenging, as the MTSS Project follows an ever-changing path. This evolution made it difficult to track events and accomplishments, as they did not always clearly relate to the project paper or contract scope of work. Routine adjustments were the norm. Because of this complexity and limited time, the resulting report is general, but it encompasses all of the elements of the teams' scope of work.

# 2 FINDINGS

## 2 1 Project Strategy and Approach

### *Findings*

During the four-year period in which interventions have taken place, an identifiable strategy has been used to manage organizational changes. One action has affected another and has led to new opportunities, or

enabled subsequent actions, or delayed or hindered certain actions. While hindsight allows one to create a sense of logical sequence, the truth is that change has required a great deal of struggle, juggling of diverse interests, and mixtures of success tempered with resistance.

The accomplishments were found in the following areas:

INTERVENTIONS	ACTIVITIES
Contractor entry into GOGCWS	<ul style="list-style-type: none"> <li>■ Identify and hire off-shore and local staff</li> <li>■ Identify and establish relationships with local counterparts</li> <li>■ Gather data, establish baseline, identify problems and determine how to approach them</li> <li>■ Identify/verify key needs for change</li> <li>■ Gain access to key decision makers</li> </ul>
Develop a framework for identifying and measuring the organizational and institutional changes required	<ul style="list-style-type: none"> <li>■ Establish the performance management paradigm               <ul style="list-style-type: none"> <li>• Define basic concepts</li> <li>• Train staff in skills</li> <li>• Establish results framework</li> <li>• Develop a package approach concept</li> </ul> </li> <li>■ Define key business processes (17 functions of GOGCWS)</li> </ul>
Define change programs (called Performance Improvement Programs" or PIP) to affect key business processes	<ul style="list-style-type: none"> <li>■ Identify and state a vision for change in key areas (this has been termed "policy formulation" by BVI)</li> <li>■ Select performance measures for each change program package</li> <li>■ Define requirements to make the change happen (resources, structural changes, systemic changes, legal, staff, equipment)</li> <li>■ Develop a work plan and a monitoring plan for actions</li> </ul>
Select priority change programs that will demonstrate that change is possible and develop models that can be replicated focus strategy on pilot efforts	Obtain agreements for pilot efforts in Embaba Water Treatment Plant for O&M, stores and supplies, & Helwan CSC as a multiple pilot customer service center approach, delegation, systems re-engineering for personnel, computerization, and financial viability

INTERVENTIONS	ACTIVITIES
Begin pilot efforts while transferring skills and changing key business processes	<ul style="list-style-type: none"> <li>■ Provide consultants to design new systems and train staff</li> <li>■ Conduct management training for key personnel</li> <li>■ Carry out, monitor, and modify the designed action plans for each pilot setting</li> <li>■ Provide the resources and equipment needed to make the designed changes</li> </ul>
Develop a core group of key managers who will become champions for change	<ul style="list-style-type: none"> <li>■ Ensure that contractor counterparts enter the first management training classes</li> <li>■ Conduct senior-level team building</li> <li>■ Provide ongoing daily support to key managers and counterparts, provide management coaching</li> <li>■ Develop a performance management training system to support managers and demonstrate effective results</li> </ul>

These interventions and activities provide an outline of the overall change model the evaluation team believes the project has been using. The administrative and management apparatus to support these efforts is evident and has been reported on in detail in quarterly and annual reports and concept papers. Documentation for the project has been prolific.

The essential finding is that a strategy for change has been articulated and is persistently followed by the GOGCWS with the assistance of the MTSS consultants.

While the issues discussed below identify some of the difficulties inherent in the model used (and perhaps for any approach), **it is the team's assessment that the change model is beginning to gain sufficient momentum to have potential to create sustainable change if supported and continued at least throughout the planned project activity completion date or PACD (and most likely beyond)**. The message of the change model has been clear, repeated, and embedded in all phases of the project. It is necessary to define where one is going, have a check list, and persistently pursue tasks.

While success looks possible and a number of achievements are evident, if technical assistance were withdrawn tomorrow,

accomplishments would likely not be sustained, except perhaps in the area of training systems development (see below, section 2.3).

#### *Issues*

##### *Entry*

The contract with Black and Veatch International was signed in December 1992. The entry process, which included getting a team in place with local counterparts and a work plan designed and negotiated, took the greater part of the first year and a half following contract signing. Focused efforts began around July 1993, a month after the project start-up workshop (refer to WASH Field Report No. 406, July 1993, Cairo Water Supply II Project Start-up Workshop for the MTSS Contract).

The start-up period was characterized by a series of difficulties. During the first two and a half years of the period under review, the leadership of GOGCWS was not particularly supportive of change efforts that would affect mainstream institutional systems. There was strong resistance even to discussing, let alone acting upon, proposals that would affect budget, tariff, staffing, regulations, delegation, decentralization, or financial autonomy. The

consultant team did not have ready access to the leadership

Client-consultant relations were difficult, communications were strained, and counterparts were assigned by the leadership in large numbers and inappropriately in order to provide favors (assignment to an “additional duty” meant incentive pay) Observers reported that the utility’s leadership did not particularly desire the institutional change aspects of Caro Water Supply II They appeared to be more interested in the physical improvements provided by the construction side of the project in addition to any commodities or other benefits that could be obtained from the institutional side of the project

At the start of the project, the GOGCWS project manager assigned to work with the contractor reportedly micromanaged the consultants and even reviewed findings from focus group meetings to keep an eye on change recommendations The first GOGCWS project manager interpreted the job as requiring heavy control The result was that he attempted to decide exactly what should and should not be done or written to inform others about the project The consultant technical assistance team had hoped for a partnership approach with joint decision making With the GOGCWS project manager’s desire for control, the consultants predictably responded by resistance Much time was lost Eventually, the GOGCWS project manager was replaced

Most of those interviewed describe the organizational culture of GOGCWS as “command and control,” engineering focused, follow the rules (don’t take risks), let the top decide, with a strong orientation toward hierarchy and centralization A strong cultural difference exists between the project consultants and the GOGCWS leadership, which is exactly what the change program is attempting to focus on Creating an environment that supports collaboration and teamwork is a great challenge Yet, an organizational culture that supports

centralization and control is a strong indicator of the need for institutional change

To address this need and internal resistance, the project team started its work within the realm of the possible by identifying and working with receptive elements within the organization The focus of attention was to set up training systems and to gain access to middle-level management through management training programs

These early efforts bore fruit A great many higher-level GOGCWS staff that began with the project have since retired The current Chairman has been on the job for about nine months and is very supportive of the change strategy and the project He articulates and champions efforts directed at strengthening middle managers, and believes in developing staff through training Key middle-level managers have become project allies and report strong support for training efforts and for organizational change Because of the “project improvement program” or PIP process, managers feel ownership for the change programs they have had a role in defining

### *Pilot Efforts*

The primary technique for introducing new systems and procedures to foster decentralization has been experimentation in pilot settings Pilot efforts have been set up for performance management in operations and maintenance, stores and supplies (procurement), and customer service This section will focus primarily on the customer service center pilot effort to highlight issues in this strategy Pilot efforts in operations and maintenance and in stores and supplies are discussed in the findings in Section 2.5 The larger issues of pilot efforts as a strategy apply to all pilot efforts

The pilot effort to establish a model customer service center at Helwan holds great promise Without computerization or a full complement of managerial staff, the effort has been successful in increasing revenue, setting

performance targets for staff, and providing training for staff

During the week prior to this evaluation, the Chairman issued decrees to establish Helwan as a customer service center and delegate certain authorities to its manager. The model service center concept is to integrate technical and customer services under one management center, and to consider the entire operation as a cost center. The center will be responsible for network maintenance, meter installation and repair, billing collection, and customer service needs.

The project consultants are assisting to develop units for customer complaints, improve management systems, increase the rate of collections, collect old debts, and reduce costs through efficiencies in metering and networks. The data are persuasive, as shown in the box below.

Interviews with GOGCWS and consultant staff indicate that the job at Helwan is about 40% complete. The success of change thus far can be attributed to several factors:

- Priority attention has been given Helwan CSC by the consultants and the Chairman
- Increased delegation has allowed the manager to make decisions
- The designated manager of Helwan CSC is providing dedicated leadership and has been trained in the mid-level managers' program, he understands how to design and monitor performance management programs because of his training
- The Helwan CSC manager has personally trained staff in meter reading, has ensured

that training was provided in network maintenance (valve exercising), and has aggressively pursued arrears in large accounts.

A great many improvements still need to be made. Large government consumers do not pay their bills and their consumption needs to be reduced, consumer service facilities need upgrading (service center reconstruction is required), and cost savings could be realized by removing outdated public standposts, updating registration, and reducing the lag time between billing and collections. (Most of the pipe in Helwan is 70 years old and requires heavy maintenance due to leaks.) All of these improvements are achievable, given resources (staff and equipment) and persistent efforts.

The pilot effort faces continual obstacles related to vertical and highly centralized administrative systems. For example, accounting systems which designate collection routes for reading meters and billing customers are managed centrally. Each collection route is maintained as a book, or file, and the file is used to input billing and to issue statements. The classification of accounts (i.e., individual, commercial, industrial, or government) is registered and entered into a collection route. The Helwan CSC has discovered that a great many government accounts have now been privatized. Government accounts are often not paid, and the water utility has little leverage. Helwan CSC's efforts to reclassify accounts to the private sector have been delayed because the central office creates reclassification files.

	Helwan CSC	GOGCWS
Arrears Collected	46.9%	7%
Receivables	1.92 months of lag	18 months of lag
Collections/billings	83%	50%

Revenue collection has improved 41% over the previous year.

only in September. The centralized system is slow, nonresponsive, minimally automated, yet the service center is totally dependent on it for setting up accounts and determining meter-reading route books.

While, on the one hand, the project is trying to create new systems at the micro level through service centers, it also needs to design major centralized business process systems such as personnel, budgeting, procurement, and strategic corporate planning in order to support decentralization. The interdependence between centralization and decentralization in terms of systems development is critical to the implementation of all performance initiatives in delegation, cost effectiveness, and eventually all project goal achievement.

Obstacles related to centralized personnel systems, budgeting, and procurement also exist. Most managers do not have effective control over who works for them or the size of their staff. While authority has been delegated to the pilot CSC, it is limited. Helwan CSC cannot negotiate with government or other nonpaying accounts without recourse to central office legal or other support services. The manager of Helwan CSC does not have his own budget.

The pilot effort also faces difficulty in being able to absorb the available technical assistance provided within a short time frame. Three key manager positions below the CSC manager have not yet been filled—the technical department manager, customer service department manager, and financial/administrative manager. Project consultants are developing initiatives and action programs (PIPs) in each of these areas without senior counterparts who could share a sense of ownership and collaborative design of the innovations. While a great deal of training is being conducted for lower-level staff, the consultants' presence in the small service center is clearly evident. Sustainability and skill transfer after the consultants withdraw is a realistic concern. A more immediate issue is that the consultants will need to work with

new managers who are expected to be assigned as counterparts by July 1996.

While pilot change projects can be effective instruments to develop and demonstrate change, it is too soon to predict with any degree of certainty whether these efforts will succeed. The larger issue of moving from a single pilot to systemwide institutionalization and sustainability for all of GOGCWS has yet to be addressed. The pilot customer service center in Helwan is but one of 16 service centers in the metropolitan area, and it has only 45,000 accounts. Will Helwan be replicable? Where should the next pilot be? How many service centers need to be operating along new guidelines before an irreversibly sustainable effect is in place?

These same questions apply to performance management efforts for the water treatment plant and in stores and supplies at Embaba And, while senior staff report that there is demand for many more pilot efforts from service center managers, availability of resources will determine the pace of such transitions.

### *Recommendations*

- Continue the successful implementation of the performance improvement program approach. Continue to require that all project initiatives have a PIP designed. Ensure that the PIP continues to be developed and supported by GOGCWS managers (i.e., they have a sense of ownership). The PIP process is the most important change management tool for the project.
- Continue to work in counterpart relationships and ensure that counterparts are in place for pilot efforts. The relationship of project consultants to GOGCWS senior managers does not appear to be strongly focused due to the emphasis on middle management and pilot programs. Greater effort needs to be made to provide senior-level coaching and advice.

to support major systems development initiatives and project goals

- Begin service center pilots in at least two additional locations within the next six months, followed by two others within a year. In order to leverage resources, consider using outstanding graduates of the empowered manager courses and the staff of the first pilot CSC as consultants to new pilot centers. (Unless there is a “decentralization momentum” and the integrated service center model develops a strong constituency, pilot efforts may not be institutionalized by the end of the project.)
- Continue to develop a core group of key managers through enhanced management training programs (see training below)
- Strengthen top-level managerial support for designing vertical administrative systems (budgeting and finance, personnel, procurement, incentives, and strategic planning) that will lead to major delegation and decentralization and support pilot efforts
- Provide ongoing management consulting and coaching for senior staff and involve them in an executive management development program that covers change principles and supportive business management concepts. (Refer to training and manpower development in Section 2.3 below.)

## 2.2 Financial Viability

### 2.2.1 Background

Financial viability is the most important objective of this project. The USAID Project Grant Agreement with the Government of Egypt (GOE) included the covenant, “Concerning water facilities to be financed under the Project, evidence that the Grantee intends and plans both (i) to increase tariffs over time, so as to cover the recurrent costs to be associated with the operation and

maintenance costs for wastewater disposal, and to begin the process of cost recovery of the capital investment and (ii) during the interim, to cover deficits through additions to the recurring cost budget of GOGCWS.”

Although GOE fully agreed to these conditions, they have not yet been implemented. The Grant Agreement was signed September 30, 1988. A summary of the project legal requirements and history is included in Appendix C.

In addition to tariffs, which cover operation and maintenance, financial viability includes such areas as reduction of costs for processing and delivering water, improved collections, and reductions of losses. Most of the performance indicators agreed to by GOGCWS focus on cost reduction and revenue collection.

### 2.2.2 Tariff Structure

#### *Findings*

Tariffs have been the most contentious issue between USAID and GOE. As GOGCWS is the country’s largest water utility, serving parts of three governorates, it also has the responsibility to collect the wastewater surcharge for the Cairo General Organization for Sanitary Drainage (GOSD). Combined, GOGCWS and GOSD have received about \$1 billion in USAID funding since 1977. Tariff collections have not been adequate to pay operating costs. For example, estimated billings reached only LE 176,742,000 in 1994/1995, compared to operating expenses of LE 262,391,000. An additional LE 40,000,000 in surcharge receipts were reported to have been transferred to Cairo GOSD for wastewater operations. GOSD’s operating expenses approach those of GOGCWS. GOSD is also the recipient of a USAID-sponsored institutional support project with similar components, including financial viability. (See EHP Activity Report No. 14.)

eliminate the annual operating deficit by 2001. The plan has been accepted by the Governor and would also increase the wastewater surcharge to 50%. As of June 1996, this plan had not been implemented.

The increase, if implemented, would have a substantial impact on GOSD's revenue. Further analysis is needed to determine whether the 50% rate is adequate. For example, the 1997 revenue would be LE 146,888,000 if Government collection rates remain at 12% and LE 187,500,000 if increased to 40% based on MTSS projections.

### *Issues*

The initial agreement between USAID and GOE called for GOGCWS to increase tariffs to the level necessary to recover all O&M costs. (This document, signed in 1984, is known as the Memorandum of Understanding.) The tariff structure was substantially increased until about 1993, when the last known residential tariff increase was made in Cairo. The MTSS project also began in 1993. Since that time, operating costs have increased considerably, resulting in an ever-widening gap between billings and costs. The result is, simply, that GOE, GOGCWS, and GOSD are in default on the agreements. The hoped-for interventions and support from the MTSS Project have not resulted in a tariff increase adequate to meet the outstanding commitments and agreements. The GOGCWS and the MTSS contractor note that their ability to bring about change is limited. Such matters as tariffs are in the hands of the Governor and the local council, and the utility has little control over the process. The Chairman, supported by his MTSS advisor team, however, does have the responsibility to advise and steer the Governor as well as USAID on problems and difficulties regarding the tariff issue. Agreements between GOE and USAID appear to have been taken lightly by the GOGCWS and MTSS and have led to a somewhat contentious working relationship with

USAID. Whether MTSS or GOGCWS alone could have influenced the outcome is moot, as USAID perception is that there has been little interest or effort by GOGCWS to address the issue. Some claim that USAID could have played a more proactive role at higher levels, but this is not really a pertinent issue in evaluating MTSS efforts regarding tariffs. All other USAID-supported utilities in Egypt have greatly increased tariffs in recent years. Cairo, by far the largest recipient of USAID funding, is the exception.

In spite of the issues in bringing about an actual tariff change, MTSS has been effective in increasing recognition and understanding within GOGCWS of the need for increasing tariffs and reducing costs. Alternative five-year tariff schedules were developed by MTSS leading to an option selected by the Chairman and accepted by the Governor for implementation. As of June 1996, the plan had not been implemented, reportedly due to the absence of an approving authority (local council). History indicates that when this roadblock is removed, some other problem will occur to delay such an approval.

The tariff plan expected to be implemented is conservative compared to that of other Governates. It also fails to make up for four years without increases, as well as inadequate increases in prior years. In this plan, an annual 28% increase in tariffs is projected over five years, bringing the basic domestic tariff from PT 0 10 to PT 0 34 per cubic meter of water in the year 2001. This compares poorly to the 1996 cost to produce and distribute a cubic meter of water—PT 0 43. Political concern and influence is very strong in Cairo. Tariff increases are probably an issue of interest all the way to the President's Office, not a responsibility solely for the Governor. As an example, planned 1995 increases were delayed because of elections throughout the country. This has happened routinely in the past.

The revised tariff plan brings the annual deficit level to LE 42,940,000 by the year 2000-2001. The MTSS team feels that this shortfall

can be made up through other cost-saving measures. In view of the current collection ratios, however, this goal will be a challenge.

### *Recommendations*

- All parties should accept the new tariff plan, when implemented, as a major step forward. They should also commit themselves to an annual review of progress and work toward joint agreement on adjustments as needed.
- The annual reviews should include representatives of USAID, GOGCWS, GOSD, the Institutional Support Contractors, the Governor, and local council representatives.
- Any future USAID expenditures for the Cairo water and wastewater sectors should include the foregoing conditions, in addition to a plan for implementing cost-accounting and cost-saving measures.

## **2.2.3 Financial Policy and Planning**

### *Findings*

MTSS has conducted studies and presented alternative approaches to establish a business accounting system, but to date without success. The Uniform Accounting System, the GOE system, still remains the standard. It is basically an accounting system and does not serve as a basis for budgeting, nor does it readily provide data regarding revenue and expenditures. Under the pilot programs, MTSS has initiated cost-accounting programs for Embaba, Roda, and the Helwan Customer Service Center (HCSC). These three sites are treated as cost centers. For Embaba and Roda, monthly reports of all operational costs for the treatment of water are now available by individual item and by cubic meter. This is the first time that management has had information that shows trends and allows comparisons between plants. For example, production costs at Embaba are about PT 10

per cubic meter, while Roda incurs about PT 14. This difference is due primarily to the size of the plants. The Helwan Customer Service Center data are equally useful, but at this time have not been computed on a cubic-meter price. These new pilot projects are laying the base for a future utility accounting system by showing management their value and serving as a tool for the budgeting process.

### *Issues*

The MTSS team has been most successful in the pilot accounting systems established to date, but there are no plans to expand these efforts. Without the consultants' continued monitoring and input over the next two to three years, these efforts may be lost. A third pilot project, the Mostorod Water Treatment Plant, did not include the cost accounting system. Staff at the WTP are most receptive to having this management tool.

The reluctance of the organization, in the past, to change to a more useful accounting and budget system comes from comfortable familiarity with the GOE's Unified Accounting System combined with reluctance on the part of the financial directors to share cost and budget data. A new Vice Chairman of Finance and Administration has recently been appointed and appears to have the vision to develop a utility-based accounting and budgeting system. However, he lacks skills related to enterprise or business accounting and will need training and direction.

### *Recommendations*

- The pilot cost center concept should be expanded to all separable units of GOGCWS as rapidly as MTSS and GOGCWS are able to undertake this activity.
- Emphasis should be put on initiating a cost center for Mostorod immediately and including a cubic-meter cost breakdown for the Helwan Customer Service Center.

- A senior development and support program for business accounting and budgeting should be developed for the Vice Chairman of Finance and Administration for budgeting and accounting

## 2 2 4 Operational Cost Savings

### *Findings*

The MTSS team has been very effective in establishing programs that will increase efficiency and reduce costs. These vary from reducing water losses to increasing collections. Also important are programs to use chemicals more efficiently and to sell scrap and surplus materials. These programs generate savings and also increase revenue from previously unpaid accounts. Details of the operational improvements underway are addressed later. Pilot efforts have shown that chemical costs can be reduced by up to 25%. Major savings can also be made in expenditures for electricity through power factor correction and improved operations. Water loss is substantial, resulting in part from poor O&M practices. Network water loss runs about 23% of production, while aftermeter losses are estimated to be 39%, leaving actual usage levels at only 38% of production. These figures are unacceptably high for a well-managed utility. Reductions in water loss would result in a corresponding reduction of chemical and electrical costs. It appears that major savings can be made in operations that would offset the need for some of the tariff increases. There is also excess staffing, major staff reductions are possible. However, labor issues are treated as political, and the GOGCWS is not yet ready to address them.

### *Issues*

MTSS's work in the operational area has been primarily to identify problems, make recommendations, and undertake training. Findings have been interesting and promising,

but issuing a report or conducting training does not necessarily bring about change. Follow-up and mentoring will be required, and for some areas this will take many years.

To date, the strength of MTSS' efforts in bringing about change has been its ability to integrate into the GOGCWS organization, gain the trust of counterparts, and to show them that there are better and more efficient ways of doing things. The evaluation team was impressed with the progress that MTSS has made in changing attitudes and creating interest in new and better technology and systems. This strength needs to be more sharply focused in key areas to reach the project objectives.

MTSS' work to date is still in the beginning stages of transforming GOGCWS into a modern, world-class utility. If the MTSS Project were to terminate in the next year, key programs currently underway would be likely to revert back to the old system.

### *Recommendations*

- Programs directed at reducing operational costs are a critical factor in reaching financial viability and should be emphasized equally with tariff rates and collection.
- MTSS, in the upcoming work plan revision, should emphasize the expansion of operational cost savings activities to include all units, MTSS should formulate a system to institutionalize such work through a mentoring and monitoring program.
- GOGCWS should develop additional performance indicators under the PIP to encourage the continuance and expansion of operational savings.

## 2.3 Training and Manpower Development

### 2.3.1 Training Systems Development

#### *Findings*

A complete training system has been designed and documented, and implementation of the system by GOGCWS is well underway, although much remains to be accomplished to complete the system. Training as a project contribution is a high point. While great progress has been made in the past year, GOGCWS is not yet able to develop and conduct a range of training programs consistently without local or external consultants. Sustainability is an issue (see issues, below). Training systems development is supported by the following accomplishments:

- A training policy has been developed, widely reviewed and approved within GOGCWS. The policy requires that all training for GOGCWS be performance-based. This means that training must be designed to meet specific outcomes related to organizational outputs and to a specified level of desirable performance.
- A training performance improvement program has been designed and is well underway in achieving its targets.
- A dynamic and highly respected individual leads the training department as manager, and the training function has been organized to report directly to the Chairman, giving it the importance and influence required to meet project objectives.
- A high committee for training, composed of senior managers and the Chairman, has been established and meets regularly to review training accomplishments and work plans.
- A training policy and operations manual has been developed and approved with GOGCWS (this is commonly referred to as the “training *laiha*”), because it contains regulations, it has been put forth for approval to the Central Organization for Administration (COAC).
- Funding, design, and furnishing of a training center at Kit Kat has been accomplished with space for 40 trainees. A training space is operational at Rod El Farag with capacity for 30 trainees, and the facility at Embaba is appropriate for 20 trainees.
- A master training plan for 1996–1997 has been developed, approved, and budgeted at LE 351,000 (which includes LE 250,000 of USAID reserve funds for vendor courses).
- Permanent training staff have been assigned (26 of 36 requested to date). The staffing strategy is to combine a small permanent core training staff with a large group of part-time trainers (35 staff) recruited from throughout the organization who are trained in essential training skills. Part-time trainers are paid from LE 12 to LE 20 per hour as incentive pay to conduct training.
- A management training program consisting of 13 modules has been developed.
- Two technical training courses have been developed.
- To date, 390 have completed the management course, 16 have had human resources training, and 30 individuals have completed a technical course.
- All training materials, course design, curricula, instructor guides, and needs assessment processes have been documented in report or manual form and are in the training data base.
- The training technology is contained within a training methodology called Instructional Systems Design (ISD), which is compatible with performance-based training and is strongly oriented to pinpointing specific skill-related behaviors or technical training. ISD approaches to the management curricular area, however, tend to be segmented and oversimplified, and

- this is true of the management curriculum provided (see management training below)
- Linking training activity to performance is right on target and is a very important element of the training approach used. A great deal has been done to relate training to performance improvements. This is a positive finding. And, more can be done to build upon these positive gains.

## Issues

### *Sustainability*

The job of building the training system will require a consistent effort over the next two (or more) years. Institutionalization will not be complete until the department is able to stand alone and perform the same work the consultants (local and off-shore) are now doing to meet performance targets. Tasks yet to be accomplished include the following:

- A training information system is in the design stage and needs to be moved to implementation and institutionalization.
- The training department is beginning to build a permanent staff and develop a training team. The training manager is holding that position on a part-time basis and is involved in a number of high-level initiatives, as well as holding a job as advisor to the Chairman. Staffing and training of the training department personnel will be complete when the department is capable of conducting all phases of training curriculum and program development from needs assessment through integrated program design and delivery. At this moment skill transfer to a full training staff has not taken place, although a limited number of part-time individuals are able to follow a pre-designed instructor's manual produced by the project consultants.

- Completing the training PIP and plan will require increasing the number of individuals trained annually.
- A training evaluation system needs to be developed and implemented.

### *Re engineering Training*

Recent re-engineering developments for performance-based approaches to training have increasingly required that training move away from a "core curriculum" (even if developed for performance improvement) to an approach that links training to organizational, or key business processes, or results/outputs (see Robert O. Brinkerhoff, *The Learning Alliance*, Jossey Bass, 1994). In this approach, measurement of training is linked to organizational performance for key outputs rather than the number of persons trained or the number of courses delivered. This assumes that the only true measure of training effectiveness is its contribution to the business outcome. The essential question is, "Will the desired performance improvement lead to a result consistent with a defined business strategy for the organization?" For example, if the desired business strategy is to reduce operational costs and improve financial viability, will training network maintenance staff in leak detection provide that result? What are the measures before training and after training? It is irrelevant if the training event is well regarded, or even if skills are learned. If they are not used, or if there is no follow-up by supervisors or focused attention from management to achieve the desired result, training investment is lost.

This approach to training requires a thorough analysis of organizational outputs related to key business outcomes and processes by managers (not conducted by training specialists, although the facilitation role is important in this process) to decide what training should be done and what will be gained from training. As Brinkerhoff notes,

“training impact mapping” is an essential early step in developing training using this approach

A training curriculum that uses this approach is dynamic and continually evolving, it emphasizes the manager and the trainee as the key stakeholders (rather than the training department) It requires organizational development skills by trainers and master training professionals to design and develop training programs

This methodology emphasizes the pre-training work phase (deciding what training will do to improve the result) and the post-training follow-up work to ensure that results or improved outputs are affected by training The actual training event is but one element in the cycle (and the easiest to manage and control) Expanding the current performance model to include impact mapping and an emphasis on training follow-up is compatible with the current performance-based approach used in the project and would be an enhancement

#### *Technology Transfer and Consultant Dependency*

The challenge for training systems development has been to establish a credible and positive contribution to GOGCWS in a relatively short period of time The chronology of training systems development provided by the MTSS consultants indicates that it took from September 1993 (when the MTSS training consultant began working) until July 1994 to identify, contract, and begin the activities of local consultants The development of the needs assessment for management training began in February 1995, and the first management training began in May of 1995 Most of the 1994 accomplishments related to preparing a training space and creating project-related tools such as PIP training Training specialists were identified and their training as trainers began in late 1994 and in July 1995 The training policy and mission statement was developed in early 1995

Most of the results of the training component have been training managers in the empowered manager core curriculum (EMCC) Most of the training for that course is conducted by external consultants contracted by the project

The GOGCWS training manager has been in his position since December 1993, training department job descriptions were written in January 1995, part-time trainers were assigned in January 1995, and middle-level managers for the training department were assigned in August 1995

Most of the inputs for design of the training system (the curriculum, training designs, manuals, policies, structure) have come from the MTSS consultants (both local and off-shore) GOGCWS staff, via focus groups, have contributed extensively, with input, advice, and involvement The GOGCWS training manager, in particular, has played a strong role in training system design The majority of the training staff, however, began work in the department after the design of systems and curriculum

While one could argue that it was important to give training a “jump start,” the task of institutionalization, sustainability, and GOGCWS ownership within the training department (beyond the training manager) still remains It is always possible to purchase appropriate skills from local consultant systems and programs specified in the BVI contracts and to be given training manuals designed by experts, but the project goal will measure sustainable GOGCWS performance in the absence of most external consultants Can the training staff now do what the consultants have done for them in curriculum design and course implementation?

A “master trainer program” would form trainers capable of using a range of training methods and able to write curriculum, design integrated training programs, and perform as professional training consultants GOGCWS is an organization which could provide national and regional leadership in training cost-

effectively if it had that capability. The project provides an opportunity for building it.

### *Recommendations*

- **Sustainability.** Continue to strengthen and develop the training systems and complete the training PIP. The training system is the most developed element of the institutional component of the project and holds great promise for continuation and sustainability, but it will not be institutionalized until the training PIP is completed.
- **Master trainer program.** An important element of sustainability will be to develop the capacity of the training department to design training that is continually evolving and which uses a full range of training methods, without undue recourse to outside consultants.
- **Methodology enhancement.** Expand the current performance model to include impact mapping prior to training and post-training follow-up. Use this methodology to set priorities and decide what training to conduct. Involve the high training committee in impact mapping exercises. Modify the training needs assessment and the PIP model to include analysis of business purposes and impact-for-change programs, as well as training itself (refer to Brinkerhoff).

### **2.3.2 The Management Development Program**

#### *Findings*

The most often-mentioned activity conducted in the project, and perhaps the most visible, has been the middle-level management training program. If one judges by popularity, the empowered manager core curriculum (EMCC) has been a resounding success.

The impact of this training on the cost-effectiveness and financial viability of the organization is difficult to assess at this point.

However, a number of important process effects from this training have helped the project gain acceptance and have improved manager morale and managerial identity with each other. The findings are as follows:

- Training classes have been formed by bringing a cross-section of managers together from different geographical and professional areas within the organization. Managers report satisfaction in networking with people they have not seen for a long time and forging new alliances.
- The atmosphere within the training program is supportive and encourages a free exchange of ideas. Managers report that this training is fun. The mix of methodologies (using about half lecture-discussion and half small-group exercises) provides an effective mix that moves the group along quickly and permits a good six to seven hour training day.
- The participants identify with their group and are provided the opportunity to feel special, as “the group of the future” for GOGCWS. This motivational effect is important for the managers and for the organization.
- Because the curriculum is focused on the performance management system, it provides a strong methodological underpinning for all project activity. Without this training, the project would have difficulty getting its message across. Because of this training, managers in pilot efforts and managers selected to be future part-time trainers report the importance of using performance improvement planning and thinking. These skills are key to project performance.

A review of the training curriculum provides these findings:

- A coherent structure for training middle-level managers, as presented in the curriculum and design, links key skills to

the goals of the program. The curriculum design emphasizes three competencies for performance management (planning a PIP, designing an action program, and monitoring and evaluating results) and three skill sets for managing people (communicating, leading-delegating-motivating training, and problem-solving)

- The primary emphasis of the curriculum is to enable managers to develop performance improvement programs and to work with staff to achieve performance targets
- The program defines “empowerment” in a particular way, which varies somewhat from most of the management literature. It defines empowerment as receiving delegated authority from above. Control over staff and resources rests with the manager. Such delegation allows the manager to be accountable to the organization to carry out approved work programs
- The curriculum structure uses a framework to describe what the role of a manager is. This framework is very much the same that an MBA or supervisory training course would have presented 30 or 40 years ago in the United States: plan, organize, staff, direct, coordinate, report, budget (POSCORB)
- The curriculum places primary emphasis on the manager as the center of activity with responsibility to lead, communicate, and solve problems (plan, implement, evaluate)
- The training design provides a good mix of theory, skills practice, and trainer-led discussions

### *Training Impact*

Observable or reported impacts of the training are few. The following are potential secondary impacts

- The Chairman of GOGCWS believes strongly in training middle-level managers

as a key to building a future organization and reports high satisfaction that the training is being conducted

- The GOGCWS training manager is very enthusiastic and supportive, and believes that he and his staff will soon be able to conduct most of the modules within the curriculum within the next year
- Two graduates who were interviewed reported changing their managerial behavior. They could link and describe in measurable terms behavioral change and its impact on improved cost effectiveness (increased collections or cost efficiencies in operations). One graduate was a WTP manager, the other the service center director of the pilot effort. Both were also receiving ongoing follow-up coaching and daily advice by the project’s external consultants. It was not possible to determine to what extent behavioral change was due to direct coaching or classroom training or both. Other graduates interviewed said they wanted to make changes but required approvals from senior staff

### *Issues*

#### *Senior level Training Needs*

Most senior managers interviewed reported that they felt “left out” of the training excitement going on, and they also said they would like to receive some of the training their subordinates are getting. The program presented for senior management by Coverdale was well received as a stand-alone event. Those interviewed said that it was good to receive once, but wondered what kind of team building would be next. While the age profile indicates that all senior managers will leave the organization within the next three to five years, this is also a critical time of institutional change. Senior managers’ support and understanding for institutional change will be important over the next three years

It is a key role of senior management to deal with the external environment. For GOGCWS, its relations with Cairo GOSD (and other sectoral organizations) need serious attention. Relationships with other public entities, the Governorate, consumer groups, the press, and USAID are all important. As far as the evaluation team was able to determine, this dimension of the management task is not being addressed effectively. Either training events, or a combination of training, coaching, team-building, and focused attention are needed for senior-level managers. As the current group of middle-level managers move into these ranks, they will also need to be able to manage from this perspective, and the current training program does not address these issues.

#### *Training Methodology Enhancement*

**Instructional Systems Design** The training approach that has been employed by the consultants is called institutional systems design or ISD. This technology is most appropriate for designing measurable objectives for technical training and is very strong and appropriate for industrial training settings. It is very appropriate to use with the performance improvement program used by the project. However, ISD is limited and has weaknesses when applied to higher-level cognitive and integrative behavioral functions which are required for management training.

Current business-related managerial skills and knowledge require attention to integrated skill and knowledge sets such as systems thinking, budgeting and cost analysis, planning, vision development, empowerment skills, leadership, and team-building concepts. These skills all require a high level of integrated thinking.

#### *Recommendations*

- Curriculum and methods Broaden the methodology and the curriculum for

management training to include stronger emphasis on the manager as a facilitator/enabler to empower staff, build in skill sets for facilitative team approaches using self-directed work groups, team-building, use of feedback, and self-development.

To accomplish this recommendation, MTSS staff should review the current curriculum and consider ways to integrate it around the role of the manager who can enable or empower his staff. Consider using a combination of cognitive and reasoning exercises, such as case studies, with situational role-play devices to simulate the feeling and attitudes of the work place. Review the literature on “the learning organization” by Peter Senge et al., and incorporate concepts of self development, continuous learning, and teamwork.

- Reframing the core curriculum Consider the current training modules in performance management as a stand-alone course (which they are) and build an enhanced training curriculum for middle managers around the concepts presented above.
- Refocus the emphasis Revise the curriculum structure that now revolves around POSCORB. This concept of a manager was designed for a command-and-control structure in industry and the military based upon Taylor’s “scientific thinking.” This model is largely at odds with the concepts of empowerment, delegation, and the leader as enabler or facilitator. It also conflicts with performance management concepts that place responsibility for results on the team rather than the manager.
- Follow-up course Develop a follow-up mid-level renewal program to be conducted a year after completion of training for refresher courses and to build upon the prior curriculum. Managers interviewed indicated they felt a strong need to learn more about business concepts such as

budgeting, finance, and cost management. As more financial delegation occurs, this will be particularly important to organizational performance. The manager as leader and facilitator of work groups (self-directed and leader-directed) is another area of learning appropriate to collaborative and delegated management.

- Follow-up current training. Strengthen the transition process that occurs when staff leave training and return to the job. Consider setting up a “buddy system” so that participants can receive coaching support from peers. Provide a strong application planning piece for the end of the training program which specifies those actions that managers intend to take upon return to the job. Provide consultant and trainer follow-up to each individual.
- Executive management course. Develop a senior-level executive program for the highest level (top 15) staff members. Train them in key skill areas parallel with middle-level managers and techniques for managing the external environment (public and consumer affairs, communicating with interest groups and stakeholders), business and financial management, and senior-level team-work.

### 2 3 3 U S -Based Training

#### *Findings*

A U S -based training program was drafted in October 1995 and submitted to USAID in January 1996. The plan includes candidate selection criteria, overall rationale, and a list of selected candidates. The first group of four senior managers visited the Metropolitan Water District of Southern California (MWDSC) March 2–12, 1996.

The purpose of the study tour was to learn about the strategic planning process that MWDSC conducts regularly. MWDSC is a large, suburban bulk water supplier for cities such as Anaheim, Santa Ana, and Orange

County. It holds few comparable values or parallels with GOGCWS. The project consultants report, however, that a future strategic concept for GOGCWS is to decentralize, with part of the organization becoming a bulk supplier. Therefore, a strategic vision of MWDSC would be useful.

As far as could be determined, the primary counterpart for off-shore training was the training manager of GOGCWS and his department. It was unclear if technical assistance was provided to train local staff in how to develop or build capacity for “twinning” exchanges or other off-shore training approaches. The planning documents were written by the consultants.

#### *Issues*

##### *Twinning’s Purposes*

The project paper and terms of reference require the contractor to support a “twinning program” that GOGCWS agreed to establish in the project agreement. The study tour to MWDSC is not a twinning program, it is an off-shore participant training program. A twinning relationship is one in which staff are exchanged for mutual benefit, learning, and contribution. GOGCWS staff and project consultants report that they see few incentives or reasons for a U S utility to send staff to Cairo. Developing a full twinning relationship is probably not a current priority of GOGCWS, and the evaluators also believe the concept to be of marginal value, given the range of other areas needing attention within GOGCWS to meet project objectives.

##### *Focus for the Future of Off shore Training*

The team believes that the focus on U S -based training is probably of little value for GOGCWS, given the opportunity to use scarce training funds in more productive off-shore learning opportunities. GOGCWS has very little in common with a U S utility.

Given the current priorities, the project's focus on setting up performance-based management, and the development of customer-service centers, rich learning opportunities can be found in settings where institutional development has taken place. The evaluation team suggests that contact be made with SANEPAR in Curitiba, Brazil (for its focus on cost effectiveness, performance management, and top-notch service centers), and the National Water Supply and Drainage Board of Sri Lanka (for its emphasis on decentralization, tariff reform, and strategic planning). Both of these organizations have transformed themselves from moribund, inefficient utilities to model organizations in recent years. In addition, both organizations work on a performance management basis and have used management training as tool for transformation.

### *Recommendations*

- Refocus the external training effort to include study tours of comparable organizations in development settings and minimize or eliminate the focus on U S - based training. Ensure that external training is linked directly to major performance improvement initiatives that will affect the financial viability and managerial autonomy of GOGCWS.

## **2 4 Administrative Systems**

### **2 4 1 Procurement, Purchasing, and Inventory Management**

#### *Findings*

The MTSS contract initially included a task for purchasing and inventory management and a separate procurement account (reserve fund) of \$15 million to be used for support of various programs, with emphasis on "Upgrading Maintenance Facilities and Equipment." These two tasks were combined into the program

objective called "Materials Management and Procurement" in the initial start-up work plan of June 1993. The evolution of the project resulted in the program being again renamed and combined into Network and Stores, while the reserve fund was reduced to \$12 million.

MTSS has been responsive in developing associated support and training materials (e.g., course manuals) and in the establishment of a pilot stores inventory program which is just now being implemented in selected areas. A performance indicator was developed to track the coding of inventory items and targeted 16,450 items to be coded by June 30, 1996. As about 150,000 items are in the stores, this effort has just started. Many of the items are surplus or unusable and should not be inventoried. Computerization has been extended to 12 store warehouses, the phase I program. The inventory and coding are done by spreadsheet and then transferred to computers. Since computerization is just beginning, the system is still being done manually.

As of this writing, the procurement efforts are well underway with a cumulative value of about \$9.5 million committed from the reserve fund. Very little of the supplies and equipment has been received, however. Much of this procurement is dedicated to the networks for operations and maintenance support. Since most of the procurement is in the early stages of the approval and tendering processes, another year may pass before its arrival.

#### *Issues*

A key issue that needs to be resolved is how to base procurement on a performance-based system and still maintain a timely delivery. For example, certain benchmarks or standards must be met consecutively before the procurement process is initiated, and the procurement process may take up to a year. Much momentum and value to the project can be lost.

Secondly, completion of the stores inventory and conversion to a computerized

system appear overwhelming. If many of the stores are stagnant or have little future need, possibly they should be ignored or deferred, leaving a core group of critical items for the initial inventory.

### *Recommendations*

- For the balance of the procurement from the reserve account, a fast-tracking approach should be considered. Procurement and performance requirement activities should run parallel so that final delivery can be achieved rapidly.
- Consider identifying a core set of store items as a minimum necessary for an effective operating system and encourage disposal of stagnant and surplus materials.
- Computerization of all stores and warehouses should be a high priority.

## **2 4 2 Management Information and Computerization**

### *Findings*

The project scope of work included a task for management information and computerization. MTSS and GOGCWS have developed an initial management information system, but computerization of GOGCWS, other than on a limited basis, has yet to be accomplished.

The Performance Management Office (PMO) was established in December 1995 with a staff of five, most of whom hold two positions. Their primary activity is to track the 17 Performance Indicators (PI's) developed under the project's Performance Improvement Program (PIP). This unit successfully completed its first report in March 1996 without the assistance of the MTSS team, producing both Arabic and English versions of the report. These are used by senior managers and the Chairman to monitor the 17 areas included in the PIs. Most of the indicators relate to financial viability and revenue

collection. For the short period that this program has been operating, the results are impressive and appear to be taken very seriously by managers and the Chairman. An initial tranche of 18 computers was purchased for this activity and assigned to the 17 PIP managers and the PMO.

As mentioned above, computerization of GOGCWS, in general, has not proceeded very far. Only a few units, such as training and selected stores inventory units, have received computers. However, the GOGCWS appetite has been whetted, and the most frequent comment made to the evaluation team was, "We need computers." The MTSS approach has been to assure that capacity and need were fully established and that use of computers would be beneficial. Although this step has been done through the computerization program, computers are not expected to arrive until early 1997 due to USAID procurement approvals and processes.

### *Issues*

The success of the performance improvement program needs to be expanded by creation of additional performance indicators. Further, results of the pilot studies, which could provide valuable information to senior managers, are not being reported by the PMO. In general, the performance management report is being used as a tool by the senior managers. Broadening its distribution to lower, middle, and first-line managers might have merit.

The PMO staff are mostly part-timers who hold other positions in GOGCWS. If the PMO is to be effective, its staff needs to be assigned on a permanent basis.

The very gradual approach to computer procurement may have been beneficial in generating interest and assuring maximum use. However, computers are needed now, but they will not be available for possibly up to a year. A more serious issue is that GOGCWS does not have an internal computer management system adequate to manage a network. The

procurement package calls for linking computer training and service for a limited period. A long-term plan is required to support GOGCWS, this support contract should be with a private-sector firm.

### *Recommendations*

- Build on the success of the PIP approach by increasing and expanding performance indicators, including the pilot programs, and broadening the circulation of the reports
- Assign permanent positions for PMO staff
- Review the computer procurement plan to find seek alternative ways to expedite delivery
- Establish a plan for obtaining a computer service/support contract on a long-term basis, funded by GOGCWS

### **2 4 3 Budgeting**

#### *Findings*

A key tool for financial viability is an accurate and efficient budgeting system. Currently budgets are prepared annually, with the GOGCWS submitting its budget to the Ministry of Finance for review, revisions, and approval about mid-January. The system generally is based on last year's program, ignoring upcoming rehabilitation and repair needs, while salaries are based on an over-staffed organization. Operating units do not play an active role in budget development other than to submit their list of needs, which they know will be arbitrarily reduced. At this time, GOGCWS does not have a budget system in place to adequately serve the organization in an autonomous role or as an independent business.

An important "grass roots" step has been initiated by the project with the establishment

of cost accounting centers at Embaba and Roda, which will provide a basis for budgeting at these two facilities.

### *Recommendations*

- MTSS should assist GOGCWS in developing a sound budget process as part of the financial viability strategy

### **2 4.4 Personnel**

#### *Findings*

Surplus manpower continues to be a major operating cost as well as an administrative burden. Because of its political sensitivity, steps to address or lessen the problem under the project have been deferred. The project is, however, using the HCSC as a model site to analyze manpower needs and to establish personnel systems.

#### *Issues*

Full financial viability cannot be reached until the manpower issue is addressed. The pressure to create jobs in Egypt will continue. However, if GOGCWS is to become an autonomous and financially viable organization, it must be able to account for redundant labor and to seek reimbursement through a training subsidy or general subsidy rather than to pass the costs onto the consumers.

### *Recommendations*

- The MTSS team needs to continue to focus on developing an acceptable plan to resolve the manpower issue so that GOGCWS can achieve financial viability.

## 2.5 Operations and Maintenance System Development

### 2.5.1 Background

Key tasks in the initial contract and work plan for O&M included the "Water Waste Reduction Program" and "Maintenance Facilities and Equipment" (A third, related task was establishing a Central Laboratory. This task was later reassigned to the facilities construction manager, CH2MHill, and therefore is not evaluated as a part of the MTSS Project.) The evolution of the project, beginning as early as the start-up workshop, has de-emphasized the "hardware programs" such as the Maintenance Facilities and Equipment task. However, the Water Waste Reduction Program has remained a critical element of the MTSS team's reformulated "Technical Support for Operation and Maintenance" or TSOM program. For the purpose of this evaluation, two areas are discussed: (a) Cost Reduction in O&M Pilot Efforts and (b) Water Waste Reduction Program.

### 2.5.2 Cost Reduction in O&M Pilot Efforts

#### *Findings*

The most important work done under the pilot studies is refinement of the use of alum and chlorine, rather than using general and loose guidelines. Work at Roda indicated that up to 25% could be saved in the costs of these two chemicals. This is a considerable savings, as about one-fourth of the cost for water treatment is for chemicals, with the balance representing power and labor.

Another activity leading to savings is the "empowered WTP Manager" with full responsibility for all activities at his waterworks site. Savings here result from improved management practices. In addition,

the pilot plants at Embaba and Mostorod have established a computerized maintenance management program, which will reduce losses from breakdowns and emergencies.

The financial boon of selling surplus and scrap materials is also important and needs continued support from the MTSS as only the tip of the scrap heap has been touched. This activity is system-wide rather than an element of the pilot projects, however, it does impact on the pilot stores which are being computerized. Such sales will greatly improve the stores warehousing by making space available, improving efficiency, and returning funds to the GOGCWS. During the project, the value of scrap sold has been LE 1,232,336, with an additional LE 2.5 million earned by the end of the fiscal year. Prior to the project, the sale of scrap and surplus materials was nil.

#### *Issues*

Pilot activities represent only a small portion of the GOGCWS organization, they are working under the direction of its best managers. The MTSS team, however, is devoting much of its resources to the pilot efforts. While progress has been excellent to date, long-term success of the pilot projects will require mentoring for at least the next two years. To be institutionalized, they must be expanded and replicated throughout GOGCWS. This is a long-term effort that will require strong support from MTSS as well as from the Chairman and senior management of GOGCWS. The pilot projects' progress to date has been excellent and has impressed key managers. However, nurturing and mentoring must continue for several years if their beneficial experiences are to be successfully implemented systemwide.

MTSS has identified other key cost-saving areas that have not yet been incorporated into the overall system or a pilot project. For example, power is the highest cost element in the treatment process. Because of the heavy use

of electric motors, a poor power factor results, which in turn results in a penalty assessed by the electric authority. Corrective equipment has been estimated to have a payback period of less than two years. Other studies should be undertaken to determine measures to reduce electricity consumption throughout GOGCWS. Initiating such changes is complicated by the fact that GOGCWS does not generally pay its electric bill, so the incentive to spend any funds to reduce electrical consumption is minimal. Until the payment of government accounts between agencies is rectified, this problem will continue to exist.

The third category with a major impact on the cost of water is labor. GOGCWS considers this an untouchable area. GOGCWS often takes on unneeded workers at the request of key political figures during the time when they have full authority under their charter to control staffing levels and skills. Generally the new hires are low-skilled and low-paid and may not initially have much of an impact on overall costs. However, once in the system, they usually have life-time employments. MTSS has initiated manpower studies but has not yet addressed this as a cost saving area.

Network operations and maintenance practices are reported to be simple and often increase the potential for leakage rather than reduce it. For example, connections are often hammer-and-chisel operations, and cheap materials are used that soon rust out—both factors which lead to major leakage problems. MTSS studies have looked into these problems, and training courses address the issues. Change is reported to be slow, however.

Alternative pipe systems such as PVC and PE, should be considered for improved durability, lower cost, and reduced friction loss. Generally such systems are more efficient and less costly. The pipe requires special handling, which can be taught to GOGCWS workers.

### *Recommendations*

- MTSS and GOGCWS should develop a plan to implement the chemical reduction program throughout all GOGCWS water treatment plants and provide technical support and monitoring as needed.
- MTSS and GOGCWS should incorporate potential electrical savings into the pilot program and develop appropriate performance indicators to monitor improvements and consider the project's provisional account for procuring equipment as a source for needed corrections and improvements.
- Any extension of the MTSS project should include a plan to reduce network losses by at least 50%, possibly starting on a pilot basis.
- MTSS and GOGCWS should incorporate manpower needs/analyses into the pilot program.

### **2 5 3 Water Waste Reduction**

#### *Findings*

The Project Paper highlighted water wastage as a key element of the institutional support program, with an emphasis on technical assistance to the GOGCWS and a public awareness program. The driving force behind this component relates to the cost of water. As wastage, on average, equals the amount consumed, the average consumer pays for twice the amount of water he or she uses. For those who do not pay, such as most government offices, the cost is borne by GOGCWS. Major improvements in this area would have substantial impact on the cost of water for most consumers and, more importantly, based on current collection rates, result in major savings to GOGCWS. MTSS recently initiated work on this component, picking up on earlier studies done by James M. Montgomery for the Cairo Water I Project, but has not proceeded past the draft report.

stages or formulated a plan of action at this time

### *Issues*

The major issue in wastage reduction is the cost of water. Inadequate tariffs lead to waste as has been the case in Cairo. The revised tariff structure for the next five years is not expected to substantially address the waste issue. Thus, other innovative approaches must be found. The draft MTSS reports are addressing these issues. A public relations component is believed to be critical, whether through MTSS resources or through the National Community Water Conservation Project (NCWCP).

The issue of government buildings is most critical to GOGCWS financial viability as the collection rate averages about 12%. If full collections were possible at the current tariff rate of LE 0.30, the GOGCWS would still substantially support the government agencies as costs of production and water are about LE 0.45. Government uses about 18% of all water consumed.

Most leakage on the consumer side of the meter is due to poor plumbing, especially leaky toilets. Improved plumbing skills and better control valves are critical issues in resolving this problem.

### *Recommendations*

- Work on the water wastage program should be emphasized, as required by the contract and Project Paper.
- A performance indicator should be developed and a GOGCWS manager assigned to implement the program.

## **2.6 Strategic Planning for Decentralization**

### **2.6.1 Background**

As a general proposition for large organizations, centralized decision-making in all important matters creates inefficiencies, lack of accountability, and low performance by managers below the very top ranks. To develop an overall strategy to promote decentralization, accompanied by appropriate delegation of authority, a strategic plan is essential. An integral goal for the MTSS project is developing a capability in GOGCWS for strategic planning to address the problems of urban expansion and the continuing needs for transformation and modernization of the utility itself. The project goal is for GOGCWS to be an autonomous and financially viable utility. In order to achieve this, it needs the capacity to conduct its own long-range and strategic planning, and it needs to decentralize.

### **2.6.2 Strategic Planning**

#### *Findings*

Attempts to do strategic planning by the MTSS consultant team were made during the period of time when receptivity to strategic initiatives was low. Data-gathering and studies were made to verify housing and population data, household income and demography. At the present time, GOGCWS does not have a clear picture of the future demand for its services. MTSS consultants and GOGCWS senior leadership have discussed the potential for the organization to become a bulk water supplier, with several cost centers delivering services to urban zones that could eventually become water distribution companies. The pilot effort to establish a model customer service center is a strategic initiative (although it is referred to as a performance improvement project) that may demonstrate the potential for cost center

operations and lead to a strategy for decentralization

To date, the responsibility for strategic/corporate planning has not been specifically assigned or located within the managerial structure of GOGCWS

### *Issues*

#### *The need for a home for the strategic planning function*

Strategic planning is currently contained within the collective or individual responsibilities of senior managers and the Chairman, who all have a number of duties. The recent formation of an office reporting to the Chairman that tracks and reports key performance data (the Performance Management Office) provides a good beginning for management information and should provide a basis for making executive-level decisions in a number of areas. One task of a corporate planning function is to track key management information, analyze and interpret it, and help senior management use it to make strategic decisions. There is a strong need to develop a PMO staff group to support corporate and strategic planning with GOGCWS.

Efforts of the MTSS consultant to conduct strategic studies in the absence of counterparts may have been a waste of resources. Currently, strategic advice is made available to the Chairman through the team leader, but no real counterparts exist apart from the Chairman and the project steering committee (which consists of all the senior staff).

#### *Changing the planning culture/paradigm for GOGCWS*

The concept of “planning” within GOGCWS has traditionally meant “technical planning.” The MTSS consultant team needs to help senior managers think of GOGCWS as a financial/business entity which undertakes

certain technical functions and provides services to consumers. Introductory training around developing a vision for GOGCWS as a modern utility will provide a framework for strategic thinking. Providing a senior-level exercise in strategic thinking leading up to a long-range vision for the authority would be of great benefit to GOGCWS.

#### *The need for a decentralization and delegation plan*

Currently, there are no plans for how to manage decentralization, targets for decentralization, and delegation of authority. Ideas are floated and discussed, but a strategic initiative needs to be developed. The strategy for moving from pilot projects to full institutionalization has not been developed. Issues such as these are strategic and deserve the benefit of options analysis and strategic planning.

### *Recommendations*

- Develop a corporate and strategic planning function within GOGCWS. Incorporate the Performance Management Office into this function. Charge this office with assisting in managing the annual budgeting process, developing annual operational plans, and developing a long-range strategic plan that is periodically updated.
- Develop a plan for decentralization.
- Conduct a “strategic thinking” exercise with senior staff that results in a defined, collaboratively developed, strategic vision for GOGCWS. Follow up the exercise with staff work that will provide the outlines of strategic initiatives that can be translated into performance improvement programs.
- Develop a plan for delegation of authority consistent with decentralization.

# 3 Summary of Recommendations and Conclusions

## 3.1 Recommendations Summary

The following sections summarize the individual recommendations presented in Chapter 2. For more discussion and suggestions on ways to implement many of these recommendations, refer to the findings, issues, and recommendations sections presented in Chapter 2.

### 3.1.1 Project Strategy

- **Performance Improvement** Continue the successful implementation of the performance improvement program approach, it is key to the change model. Continue to require that all project initiatives have a PIP designed.
- **Counterparts** Continue to work in counterpart relationships and ensure that counterparts are in place for all pilot efforts. Strengthen the relationship of project consultants to senior managers and assign counterpart pairings at Vice-Chairman and department-head levels to correspond to project initiatives for systems development.
- **Pilot efforts** Begin service center pilots in at least two other locations within the next six months, followed by two additional ones within a year.
- **Management strengthening** Continue to develop a core group of key managers through enhanced management training programs (see training below).
- **Re-engineer administrative systems** Strengthen top-level managerial support for systems re-engineering of major vertical

administrative systems (budgeting and finance, personnel, procurement, incentives, and strategic planning) and develop and implement programs for their redesign.

The major goals of decentralization, managerial autonomy, and financial viability will not be met without core administrative systems that allow decentralized and delegated operations for customer service centers and water treatment plants.

- **Executive management** Provide ongoing, senior-level management consulting and coaching for senior staff and involve them in an executive management development program on change principles and supportive business management concepts.

### 3.1.2 Financial Viability

#### *Tariff*

- All parties should accept the new tariff plan, when implemented, as a major step forward. Review meetings should be held at least annually to make adjustments as needed. These meetings should include representatives of USAID, GOGCWS, GOSD, the Institutional Support Contractors, the Governor, and local council representatives.
- Any future USAID expenditures for the Cairo water and wastewater systems should include the foregoing conditions, in addition to a plan for implementing cost accounting and cost-saving measures.

### *Financial Policy and Planning*

- The pilot cost center concept should be expanded to all separable units as rapidly as MTSS and GOGCWS can effectively undertake this activity. A cost center should be set up for Mostorod immediately. Water costs per cubic meter should be worked out for the Helwan Customer Service Center.
- A senior development and support program for business accounting and budgeting should be developed for the Vice Chairman of Finance for Budgeting and Accounting.

### *Operational Cost Savings*

- Reducing operational costs is critical if the utility is to become financially viable. This area of improvement is as important as tariff rates and collections and should receive equal emphasis.
- In the upcoming work plan revision, MTSS should expand cost-saving activities to include all units. It should also formulate a system to institutionalize such work through a mentoring and monitoring program.
- GOGCWS should develop additional performance indicators under the PIP to encourage the continuance and expansion of operational savings.

## **3 1 3 Training and Manpower Development**

### *Training Systems Development*

- Sustainability. Continue to strengthen and develop the training systems and complete the training PIP.
- Sustainability. Develop a master trainer program to ensure sustainability of gains in the training department.
- Methodology enhancement. Expand the current performance model to include

impact mapping prior to training and post-training follow-up. Use this methodology to set training priorities. Involve the high training committee in impact mapping exercises. Modify the training needs assessment and the PIP model to include analysis of business practices and impact of change efforts.

### *Management Development*

- Curriculum and methods. Broaden the methodology and curriculum for management training to include stronger emphasis on the manager as a facilitator/enabler to empower staff, build in skill sets for facilitative team approaches using self-directed work groups, team-building, use of feedback, and self-development.
- Reframing the core curriculum. Consider the current group of training modules for middle managers as a stand-alone course in "performance management" (which it almost is), build an enhanced management training curriculum around the concepts presented above.
- Refocusing the emphasis. Shift the emphasis of the curriculum, which now revolves around the old-line command-and-control-type functions of a manager (POSCORB), to an updated approach with the manager as a work group leader and facilitator for staff empowerment.
- Follow-up course. Develop a follow-up renewal program for mid-level managers to return to training a year later to refresh and build on the curriculum.
- Follow-up support for training. Strengthen the re-entry and training application process after staff members leave the courses and return to their jobs.
- Executive management course. Develop a program for the senior staff (the top 15) that will train them, parallel with middle-level managers, in key management skill areas and also in techniques for dealing with the external environment (public and

consumer affairs, communicating with interest groups and stakeholders), business and financial management, and senior-level team work

### *U S -Based Training*

- Refocus the external training program to include study tours of comparable organizations in development settings, minimize or eliminate U S -based training Structure the external training program so that it is linked directly to major performance improvement initiatives supporting the financial viability and managerial autonomy of GOGCWS

## **3 1 4 Administrative Systems**

### *Procurement*

- For the balance of the procurement from the reserve account, a fast-tracking approach should be considered whereby procurement and performance requirement activities run parallel with the ability to move the final delivery step forward rapidly
- Consider identifying a minimum core of store items for an effective operating system, encourage disposal of stagnant and surplus materials
- Computerization of all stores and warehouses should be a high priority

### *Management Information Systems*

- Build on the success of the performance improvement program by increasing and expanding performance indicators Broaden the PIs for the pilot programs and circulation and use of MIS reports
- Assign permanent full-time positions for the Performance Management Office staff
- Review the computer procurement plan to look for ways to expedite delivery

- Establish a plan for obtaining a computer service/support contract on a long-term basis, using GOGCWS funds

### *Budgeting*

- MTSS should put emphasis on the budget process (and budget development) as part of the financial viability strategy The GOGCWS should be moving toward a utility-based budgeting system

### *Personnel*

- The MTSS team needs to continue its work on the manpower issue Developing an acceptable plan to resolve the problem of overstaffing is essential if GOGCWS is to achieve financial viability

## **3 1 5 Operations and Maintenance**

### *Cost Reduction in O&M Pilot Efforts*

- MTSS and GOGCWS should develop a plan to implement the chemical reduction program throughout all GOGCWS water treatment plants MTSS should provide technical support and monitoring as needed
- MTSS and GOGCWS should incorporate potential electrical savings into the pilot program and develop appropriate performance indicators to monitor improvements and consider the provisional account as a source for needed corrections and improvements
- Any extension of the MTSS Project should include a plan to reduce network water losses by at least 50%, possibly starting on a pilot basis
- MTSS and GOGCWS should incorporate manpower needs/analyses into the pilot program

## *Water Waste Reduction*

- Work on the water wastage program should be emphasized to give it the focus required in the contract and Project Paper
- Performance indicators should be developed and a GOGCWS manager assigned to implement the program

### **3 1 6 Strategic Planning for Decentralization**

- Develop a corporate and strategic planning function within GOGCWS. Incorporate the Performance Management Office into this function. Charge the PMO with assisting in managing the annual budgeting process and developing annual operational plans and a long-range strategic plan
- Develop a plan for decentralization
- Conduct a “strategic thinking” exercise with senior staff that results in a defined, collaboratively developed, strategic vision for GOGCWS. Follow up the exercise with staff work to develop an outline of strategic initiatives that can be translated into performance improvement projects
- Develop a plan for delegation of authority consistent with decentralization

## **3 2 Conclusions**

### **3 2 1 Performance to Date**

Overall performance of this project to date is rated “fair” in some areas and “improving-to-good” or “very good” in others. The greatest strides have been made during the past year as the project has now gained respect and momentum within GOGCWS. Much of this can be credited to the new Chairman, who has been very supportive. Recent successful events include the start-up of very effective pilot projects, an excellent training program, and an operational Performance Management Office. The MTSS team shares credit for these

accomplishments. Although, in general, goals and objectives were not met during the first two years of the project, it was a period of developing trust and understanding between GOGCWS staff and the MTSS team. Building a working relationship was a necessary step for the successful efforts now underway to begin to take shape. Much more now needs to be done, as the re-engineering of GOGCWS has just begun. This window of opportunity is expected to continue for at least the next three years, the tenure of the current Chairman.

The evaluation team notes that even though recent accomplishments have been impressive, much remains to be done. The lofty vision of the Project Paper will not be reachable during the remaining year of the project, nor will sustainable systems and programs specified in the BVI contract. However, BVI could probably leave behind the required documents and reports necessary to meet their contractual requirements. (Many of these documents are likely to be relegated to the shelves, as have many past studies under institutional support programs.) For most institutional support efforts, a minimum of three years of external technical assistance is required to further the chances of sustainability. Manpower systems and financial systems take even longer to put into practice on a permanent footing.

The tariff issue has been a contentious problem for all parties, with USAID rightfully claiming that the Egyptians have once again failed to meet legal agreements, while GOGCWS and MTSS feel they have been assigned the responsibility to rectify a condition that is not under their control. GOGCWS interests and MTSS fully believe that the recent plan accepted by the Governor will be fully implemented within the next month or two. The plan provides for a 28% annual increase for five years for water, and an increase to 50% for the wastewater surcharge. This plan has to be ratified by a local council, which has the authority to make changes. This potential threat requires close USAID

monitoring. If the plan is accepted, all parties involved should claim victory and move on to the next steps of continuing to improve the water and wastewater utilities in Cairo. Without further development of each, especially regarding operations and maintenance practices, the impact of the \$1.2 billion USAID investment will be less than its intended potential and of shortened duration.

### 3.2.2 Contractor Performance

The BVI team is highly professional and dedicated to bringing about the required changes to make GOGCWS a financially viable utility. BVI's first two years in this contract were spent primarily conducting baseline studies, developing tools for project support, and designing systems. The team also established a working relationship of trust with the GOGCWS senior management.

Acceptance of outside consultants as internal GOGCWS re-engineering agents was not easy. The contractor staff met with much resistance until the appointment of the current Chairman. As of this writing, GOGCWS and MTSS are working as a cohesive team. To gain this confidence and trust, MTSS, however, has taken on some of the traits of its host, such as an air of independence and reluctance to cooperate with outsiders. For example, there is a general perception by both GOSD and USAID that the MTSS team could be more supportive of common sectoral interests, especially related to tariff issues. Stronger USAID intervention would be helpful.

Performance as measured in the last few months has been exceptional. Due to slow progress in the initial two years, however, much ground needs to be covered by the project completion date. The project goals of revenue enhancement, cost reduction, and organizational strengthening do not have quantitative measures. As such, the evaluation team feels that even though much success could be claimed in meeting these goals by the end of the project (December 31, 1997), much more

effort will be required to assure sustainability. As regards the nine tasks identified in the BVI contract, some level of work is being done in each except for the central laboratory task, which has been completed by others. Many of the tasks have evolved in scope or have been revised. These variations began as early as the initial start-up workshop, held in May 1993. The record is untidy, and the BVI contract may need to be amended to reflect the current direction of the project.

The learning curve has been a long one, which has been tedious for the consulting team. As of June 1996, the GOGCWS/MTSS relationship is strong and working well. However, the project will need at least another three years of intensive effort from the contractor to meet its goals. An annual review of the project by USAID is needed, conducted either by USAID staff directly or with consulting assistance. Including a workshop in the review process would be beneficial. Project strategy, operational cost reduction (especially network and wastage losses), finance and budgeting, and integration of the pilot programs are areas which should be examined in the annual review.

### 3.2.3 Project Strategy to Transform GOGCWS

The performance improvement methodology discussed in the findings is beginning to gain sufficient momentum to create sustainable change. This approach will need to be supported and continued at least to the planned project completion date, and perhaps beyond. The program is a very powerful tool. It requires GOGCWS staff to decide what they need to change, to think it through, and then to assign performance measures. Through this methodology, most of the senior staff will gain experience in reviewing achievement of performance indicators regularly at steering committee meetings. If a manager is able to have a PIP approved for a major activity, he will also receive the rewards of visibility and

the support of the project. There are a lot of incentives inherent in the model.

This methodology, which frames all pilot efforts and training activities, is also supported by the commodities program. Developing a

performance improvement program is almost identical to developing a "results package," in re-engineering language. It integrates the project and provides a framework for measuring results.

## APPENDIX A

### PERSONS INTERVIEWED

#### Consultant Team

John Dalton	Team Leader
Buck Osteen	Network maintenance
David Ferguson	Laboratories and Chemicals
Ahmed M Allam	
Assad N M Abdel Fattah	Manager Water & Wastewater Sector
Ken Clarke	Management and Operations
Peggy Howe	Finance and Accounting
Randy Ackerman	Personnel
Vince Niemeyer	Participant Training & Incentives
Bob Kirkman	Procurement
Keven Haupt	Computerization
Negwa Omar	Finance
Bob Peter	Customer Service
Heba Bakr	Cost Accounting
Mahmoud Hassanein	Technical Training
Fraser Parsons	Water wastage
Howard Sokoloff	Training
Farouk el Sheikh	Management

#### Project Implementation Unit

Magdy M Morgan	Head of PIU
Hafez Abouel Fettouh	Financial Member
Mokhtar El Moaz	Lawyer and Legal Member

#### General Organization for Greater Cairo Water Supply

Adel El Toweiry	Chairman
Bahat Shenouda	Vice Chairman Technical Affairs
Samir El Bahnasaoui	Vice Chairman Finance & Administrative Affairs
Yousef El Gamat	Director Water Works
Mohamed Abdetzaher	Director Water Works Service
Ahmed Soliman	Plant Manager Embaba
M Abou Khalaf	Director of Training
Taher Yousef	Manager Helwan Customer Service Center
Mohamed Akl	Plant Manager Roda
Galal Hesmat	Plant Manager Mosotrod
Gamal Abdel Monin	Performance Management Office
Roda Mohamed Ryad	Performance Management Office
Hesham Mohamed	Performance Management Office

A-1

USAID/Cairo/UAD

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Alvin Neuman  
Peter Argo  
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## APPENDIX B

### REPORT REFERENCES

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- 28 Training Operations and Policy Manual (Arabic)
- 29 EHP Activity Report No 10, Findings Provincial  
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- 30 U S -Based Training Master Plan  
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- 31 MTSS "Computerization Plan (CP) 1996-2005" Vol 1, September 1995  
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- 32 MTSS Information Management Plan  
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- 34 "Draft Specifications, GOGCWS Large Systems Computer Procurement," MTSS Project  
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## APPENDIX C

### LEGAL NOTES

#### PROJECT PAPER

The Project Authorization for the Cairo Water Supply II Project Number 263-0193 was on September 25, 1988

Several Conditions Precedent to Disbursement of funds were required of the Government of Egypt (GOE) Of particular importance was the requirement for the Government of Egypt to provide “evidence of the Cooperating Country's intention and planning both (i) to increase tariffs, over time, not only to cover 100% of operation and maintenance costs but to cover also the recurrent costs associated with Project financed facilities and (b) during the interim, to cover deficits through additions to the recurring costs budgets of the GOGCWS ”

In addition several Covenants were required of which the following was important “The parties agree to meet at least annually to review performance under the Project during the previous year and anticipated performance during the following year The reviews will include evaluation of funding for the project, construction implementation, institutional development, and progress being achieved toward the objectives set forth in the Memorandum of Understanding (MOU) of January 1984 ”

#### MEMORANDUM OF UNDERSTANDING

The key MOU objectives required of the GOE concerning this project were

- Tariff increases adequate to cover the cost of water and wastewater operations, maintenance, debt service, and routine improvements as well as appropriate increases by the GOE in the size of the operations, maintenance, and investment budgets provided to fund the sector
- Provision of adequate facilities for training and technical services to support the sector and also an incentive system to maintain and recruit qualified staff
- The establishment of autonomous local water and wastewater organizations, with the authority to retain service revenues for their own operating needs
- Annual reviews of performance of the program during the previous year and the anticipated performance during the following year

The MOU was signed in January of 1984 by the Minister of Reconstruction and Minister of State for Housing and Land Reclamation and the Minister of Investment Affairs and International Cooperation

## GRANT AGREEMENT

The Project Grant Agreement between the Arab Republic of Egypt and the United States of America for Cairo Water Supply II was approved on Sep 30, 1988. The condition precedent and covenant noted above under the Project Paper Authorization were both reworded to the following:

- "Concerning water facilities to be financed under the Project, evidence that the Grantee intends and plans both (i) to increase tariffs, over time, so as to cover the recurrent costs to be associated with the operation and maintenance costs for wastewater disposal, and to begin the process of cost recovery of the capital investment and (ii) during the interim, to cover deficits through additions to the recurring cost budget of GOGCWS

- "joint identification and evaluation [at least annually] of problem areas or constraints which may inhibit such attainment [meeting project objectives], including funding, implementation of construction activity, institutional development and progress under the Memorandum of Understanding between the Parties of January 1984 "

## FIRST AMENDMENT TO GRANT AGREEMENT

The Project Grant Agreement was amended on Sep 24, 1991 to provide additional funds to the project. The conditions precedent and covenants were not revised. The amplified project description including the illustrative financial plan is attached.

The Grant Agreement provides that the Project's Institutional Development Component will provide organizational and technical systems support to the water authority in the following areas:

- Manpower Development and Training
- Establishing a "Twinning" Exchange Arrangement with a U S Water Utility
- Purchasing and Inventory Management
- Generic Systems Improvements
- Computer Center and Automation Program
- Upgrading Maintenance Facilities and Equipment
- Establishing a Central Laboratory

## BLACK AND VEATCH INTERNATIONAL CONTRACT

The Black and Veatch International (BVI) contract was signed on Dec 21, 1992. The purpose of the contract was to upgrade the management and services of the organization through a wide range of training interventions, systems changes and commodity procurement. The scope of work specified the detailed activities necessary to satisfactorily complete the contract as the following nine tasks plus support for procurement from a reserve fund

- Task 100 - Training and Manpower Development
- Task 200 - Establishing a Twinning Exchange
- Task 300 - Purchasing and Inventory Management
- Task 400 - Water Waste Reduction Program
- Task 500 - Central Laboratory
- Task 600 - Management Information and Computerization
- Task 700 - Upgrading Maintenance Facilities and Equipment
- Task 800 - Management Assistance, Management Development and Organizational Performance Assistance
- Task 900 - Project Reports
- Other - Assist with the purchases of equipment from the reserve fund

## THE GENERAL AUTHORITY FOR GREATER CAIRO WATER UTILITY

Decree Number 1638 of 1968 by the President of the United Arab Republic established the General Organization for Greater Cairo Water Supply. Amendments in 1974 and 1975 provided further direction on the structure of the Board of Directors

The Authority and its Board of Directors were given broad powers and authorities which have never been fully accepted or utilized as old traditions are not easy to change. For example the Board is to "Establish the by-laws and the regulatory resolutions pertaining to the Authority's financial and administrative affairs and its staff members without being restricted to government rules." The "without being restricted to governmental rules" is a freedom that has not been accepted

ANNEX I Amendment  
Cairo Water Supply II Amplified  
Project Description

Elements of this amplified project description may be changed by written agreement of the representatives named in Section 8.2 of the Project Grant Agreement without formal amendment of the Agreement, provided that such changes are within the general scope of the project as set forth in the text of the Agreement and any amendment thereto.

I Project Description

Cairo's present water production and distribution system was designed to handle less than one half of the current water needs of the city. The problem of a shortfall in water production is further exacerbated by poor maintenance of the old distribution system which causes frequent water failures and excessive losses from leakage. The organizational structure and operational systems of the General Organization for Greater Cairo Water Supply (GOGCWS), the entity responsible for potable water, needs upgrading to meet demands of the growing population in Cairo. The Cairo Water Supply I project (263-0038) began addressing Cairo's major water supply problems by refurbishing and adding capacity to Cairo's major water filtration plant, Rod El Farag. Study of the hydraulic capacity of the network concluded that in order to meet the projected demand, additional transmission capacity is required to convey additional supply of water from the recently completed El Fostat Water Treatment Plant to the new reservoirs in the Rod El Farag Service area.

The Cairo Water Supply II project will provide funding to construct the required storage reservoirs at Darrasa and Abassia and transmission lines from the Fostat Treatment Plant to these reservoirs. The project will also help upgrade the distribution system thus improving the efficiency in the Rod El Farag service areas. An integral part of the project is establishment of a revolving fund for loans to assist home owners (in the project service area) in connecting to the public sewers and water mains. This revolving fund will continue after the project is completed.

In addition, this project will strengthen the institutional capacity of the water authority thus increasing its efficiency, its operation and maintenance capability, and revenue collection and accounting capabilities.

II Project Components

The project has two major components

- a) Infrastructural Development, and
- b) Institutional Development

The Infrastructural Development component will include the following

- Installation of approximately 20 kilometers of New Transmission Pipelines
- Installation of about 33 kilometers of Distribution Pipelines
- Erection of Four New Storage Reservoirs
- Facility Specific "Hands-On" Training for New Equipment and Facilities

The Institutional Development Component will provide organizational and technical systems support to the water authority in the following areas

- Manpower Development and Training
- Establishing a "Twinning" Exchange Arrangement with a U S water Utility
- Purchasing and Inventory Management
- Generic Systems Improvements
- Computer Center and Automation Program
- Upgrading Maintenance Facilities and Equipment
- Establishing a Central Laboratory

### III Contribution of Parties

AID grant funds will finance the foreign exchange costs for the construction contracts and both foreign exchange and local currency costs for the construction management/engineering services contract and the institutional development/technical assistance contracts and related procurements. USAID will also finance the procurement of fittings required for the locally financed distribution pipelines contract. AID grant funds do not include LE costs for taxes, customs or social insurance which, if assessed, will be paid by the GOE

AID will provide financing for all foreign exchange costs from ESF account funds granted to GOGCWS for host country contracts. Payment will be made by USAID through direct letters of commitment.

The GOE will provide local currency (LE) funding for the local currency portion of the Reservoirs and Transmission lines construction contracts. The GOE will acquire the land and finance all local currency costs affiliated with support of the two construction contracts. The GOE will totally finance the distribution pipelines construction contract. The GOE will provide LE 2.5 million from the Special Account to cover the establishment of a revolving funds for loans to assist home owners (in the project service area) in connecting to the public sewers and water mains.

IV Illustrative Financial Plan:

CAIRO WATER SUPPLY II PROJECT  
SUMMARY COST ESTIMATES AND FINANCIAL PLAN  
AS OF THE FIRST AMENDMENT TO THE GRANT AGREEMENT

(AID Contribution - Million \$)  
(GOE Contribution - Million L E)

Project Inputs	Previous Obligations	A I D. FY-91 Obligations	Total Obligations To-Date	GOE LE
Network Upgrading	60 6	8.0	68.6	53 8
Institutional Development	35 1	--	35 1	--
Project Contingency	--	--	--	3 0
Audit & Evaluation	0 3	--	0 3	--
Revolving Fund	--	--	--	2 5*
In-Kind	--	--	--	28 0**
<b>TOTALS</b>	<b>96 0</b>	<b>8 0</b>	<b>104 0</b>	<b>87 3</b>

\* Special Account funds to be used for establishment of a revolving fund for loans to assist home owners in connecting to the public sewers and water mains

\*\* Includes estimates for land acquisition, owner furnished buildings, office space (GOE and consultants), Recurrent costs, equipment, furniture and fittings, and related services and salaries